

Annual Forecast of
Alberta School Enrolments
1979 - 1988

Fall, 1979

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Annual Forecast of Alberta
School Enrolments
1979 - 1988:
A Summary

Prepared by
Enrolment Projections
Committee
Fall, 1979



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Alberta Education's Enrolment Projections Committee (EPC) comprises representatives of the Planning and Research Branch (serving as chairman), the Finance, Statistics and Legislation Branch, Student Evaluation and Data Processing Services, and the Special Projects Section. The EPC provides a forum for discussing patterns of Alberta school enrolments, assists interbranch coordination of study of school populations, and, where appropriate, counsels senior management on enrolment matters.

ANNUAL FORECAST OF ALBERTA SCHOOL ENROLMENTS

A SUMMARY

BACKGROUND

In Spring 1977 Alberta Education established the EPC in order to project provincial school enrolments for 1977 and 1978, develop a 10-year enrolment projection for use in planning, and create a reliable means for in-house forecasting of enrolments. The publication Alberta Short-and-Medium-Range Pupil Enrolment Projections 1977-86 reports the results of the 1977 work (an abstract of the report appears on page 1 of Planning and Research's Annual Research Highlights 1977-78, September, 1978).

The Fall 1978 Annual Forecast extended and refined the 1977 work, shifting the 10-year forecast period to 1978-87, and reporting enrolment projections as province-wide totals by grade. The main techniques employed were Cohort Progression and Participation Rate (see below under "Methodology").

This Fall 1979 Forecast further extends earlier work by revising the (Fall, 1978) enrolment projections for the 1979-1987 period to account for 1978 actual enrolments and by making some minor adjustments in method, as noted below. Generally the changes affect previous estimates by 1% or less. The current report moves the 10-year forecast horizon ahead to 1979-88, and compares the previous and revised forecasts with actual September 30, 1978 enrolment.

It is intended that future Annual Forecasts be issued yearly in the fall and include regional and school system as well as provincial level projections.

DATA SOURCES AND METHODOLOGY

Data Sources

As in 1978 the prime sources of data were departmental records (completed copies of the September enrolment report -- Form A0304-320A), and the 1978 publication Population Projections 1977-2006, published by Alberta Treasury (Alberta Bureau of Statistics, or ABS) in cooperation with an interdepartmental advisory committee of which Alberta Education is a member.

Migration. Migration assumptions remain unchanged for the current forecast, i.e., the assumptions are those developed by Alberta Advanced Education and Manpower, and listed by Alberta Bureau of Statistics as Set C. Under these assumptions positive net migration to Alberta will rise beyond the current three-year average (1976-78) of 38 000 to a maximum of 56 000 persons in 1982, in response to construction throughout Alberta of large-scale industrial projects. Net migration will decrease to 34 000 in 1986 as the new industrial plants become operational (see Table 1).

The age distribution of net migrants derives from comparisons between the projected 1976 total population and the actual 1976 Census counts.

Fertility. The "high", "central", and "low" projection series in Table 2 employ three different assumptions about fertility rates. The high projection (using ABS Series 4, medium fertility assumption) assumes that fertility is stable through the projection period at the 1974 level, wherein the average number of children which women will have during the childbearing ages of 15 through 49 is 2.109. The central projection (ABS Series 1, low fertility assumption) anticipates a continuing decline below the 1974 fertility rate to 1.914 births per woman by 1985, stabilizing thereafter for the remainder of the projection period. The low projection uses a calculation of the actual birth rate for females aged 20 through 34 in 1978, and applies this rate to ABS Series 4 projections to estimate expected births from 1985 through 1988.

Methodology

Components Approach. As in 1978, the two methods employed are the Age-Cohort Progression (AP) method, and the Grade-Cohort Progression (GP) method. The AP method was employed in the same manner as in the previous year; the GP method used a new assumption in calculating beginner enrolments.

The Age-Cohort Progression method involves estimating the progression of the base year school population (September 30, 1978 enrolment) by single year of age and adding net migration. Progressions by grade for 1979-88 are obtained by apportioning the age-distributed school population according to ratios of students of a particular age in, above, and below the modal grade, and in opportunity classes. Beginner enrolments for the year 1979 through 1981 are set in relation to their actual 1977 age cohort. For 1982 through 1988, beginners are taken as a function of ABS Series 1 and 4 projected age 5 and 6 populations.

The Grade-Cohort Progression method applies representative grade-to-grade transfer rates to the September 30, 1978 grade enrolments. The 1978 GP-

TABLE 1

LOW FERTILITY¹

	<u>TFR*</u>		<u>TFR</u>
1979	2.027	1984	1.933
1980	2.007	1985	1.914
1981	1.987	1986	1.914
1982	1.971	1987	1.914
1983	1.952	1988	1.914

MEDIUM FERTILITY²

2.109 used throughout projection series 1979-88 inclusive.

MIGRATION³

	<u>Net Migration</u>		<u>Net Migration</u>
1979	37 000	1984	38 000
1980	45 000	1985	36 000
1981	52 000	1986	34 000
1982	56 000	1987	34 000
1983	50 000	1988	34 000

* Total Fertility Rate - births per woman over childbearing years of 15-49

¹ fertility assumptions of Series 1, Population Projections Alberta 1977-2006, Alberta Treasury, 1978

² fertility assumptions of Series 4, Population Projections

³ migration assumptions of both Series 1 and Series 4, "Migration Set C", Population Projections

based forecast calculated beginner enrolment at 115% of the births six years earlier; the 1979 forecast uses a rate of 118% to reflect the composite effect of cumulative net migration and mortality figures over the six year period. Actual births for 1973-79 were used for the 1979-85 projections, and projected 1980-82 births for the 1986-88 projections.

Ratio Methods. The Participation Rate (PR) method takes all those persons of eligible school age expected in some future year and assigns them by single year of age to specific grades. Using linear regression on transformed values for the years 1961, 1966, 1971 and 1976, age-specific grade participation rates obtained last fall for 1979-87 were revised and extended to include 1988. The rates were then applied to the Series 4 and 1 projected populations for ages 5 to 21 inclusive.

PROJECTED ENROLMENTS

The "high" and "low" projections presented in Table 2 and Figures 1 and 2 delimit the range within which actual future enrolments are expected to lie. The "central" projection is the series which the Enrolment Projections Committee regards as the most likely path of future in-school populations. The results obtained from the three projections are presented without reference to the underlying assumptions (low or medium fertility; low or medium migration) or the projection techniques (Age-Cohort or Grade-Cohort Progression, or Participation Rate) employed.

All projections are made and reported as of September 30 in each year.

Results

The 1979 revised forecast involves slight changes in all the projections reported in the 1978 Annual Forecast. The differences in Table 2 figures reported in the 1978 and 1979 forecasts range from less than 1% to about 5%, depending on projection, year, and school level.

Total Enrolments. The high projection in Table 2 foresees an increase in total enrolment through the projection period to a 1988 level 26% above that of 1979. The year of lowest enrolment is 1979. The central projection anticipates a decline to 1980 before a steady upward movement to a 1988 level about 19% above the 1979 figure. The low projection indicates decline in 1979-81, a recovery to 1979 levels about 1984, and a relatively swift increase thereafter to a 1988 level about 7% above 1979.

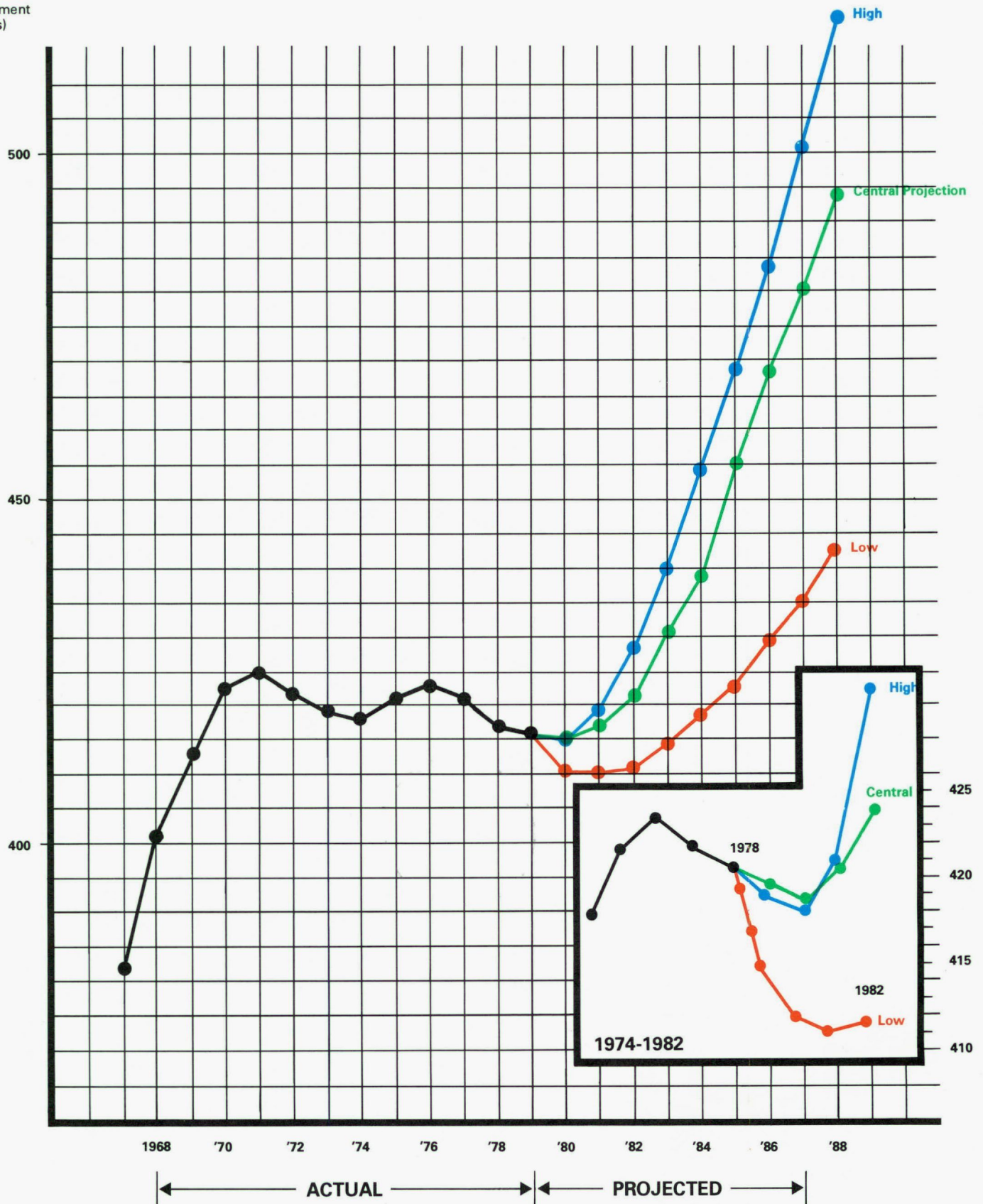
TABLE 2
PROJECTED ALBERTA SCHOOL ENROLMENTS
(Fall, 1979)

"HIGH"	<u>TOTAL</u>	<u>ELEMENTARY</u>	<u>JUNIOR HIGH</u>	<u>SENIOR HIGH</u>
1979	413 410	202 849	106 277	104 284
1980	415 895	207 078	104 910	103 907
1981	419 628	211 804	105 965	101 859
1982	428 702	219 401	108 567	100 734
1983	440 071	228 035	111 168	100 868
1984	454 042	239 248	112 341	102 453
1985	468 820	251 349	112 479	104 992
1986	484 860	264 172	113 285	107 403
1987	501 822	277 250	115 935	108 637
1988	519 886	290 165	120 228	109 493
 "CENTRAL"				
1979	416 987	205 938	105 656	105 393
1980	415 672	208 841	104 070	102 761
1981	417 009	213 191	105 191	98 627
1982	422 330	219 309	107 863	95 158
1983	432 231	227 759	110 477	93 995
1984	444 111	237 534	111 468	95 109
1985	455 995	246 590	111 897	97 508
1986	468 480	255 896	112 887	99 697
1987	481 157	264 992	115 913	100 252
1988	494 394	273 650	120 139	100 605
 "LOW"				
1979	415 044	204 274	105 836	104 934
1980	411 973	205 543	103 810	102 620
1981	410 968	208 248	104 192	98 528
1982	411 985	211 294	105 537	95 154
1983	414 520	214 432	106 721	93 367
1984	418 333	217 877	106 703	93 753
1985	423 061	222 544	105 454	95 063
1986	429 242	227 667	105 553	96 022
1987	435 844	231 598	108 319	95 927
1988	443 003	235 402	112 753	94 848

Notes: 1)"High" Projection: PR method using Medium Fertility/Migration assumptions of ABS Series 4
2)"Central" Projection: AP method using Low Fertility/Migration assumptions of ABS Series 1
3)"Low" Projection: GP method using modified Low Fertility/Migration assumptions derived from ABS Series 1

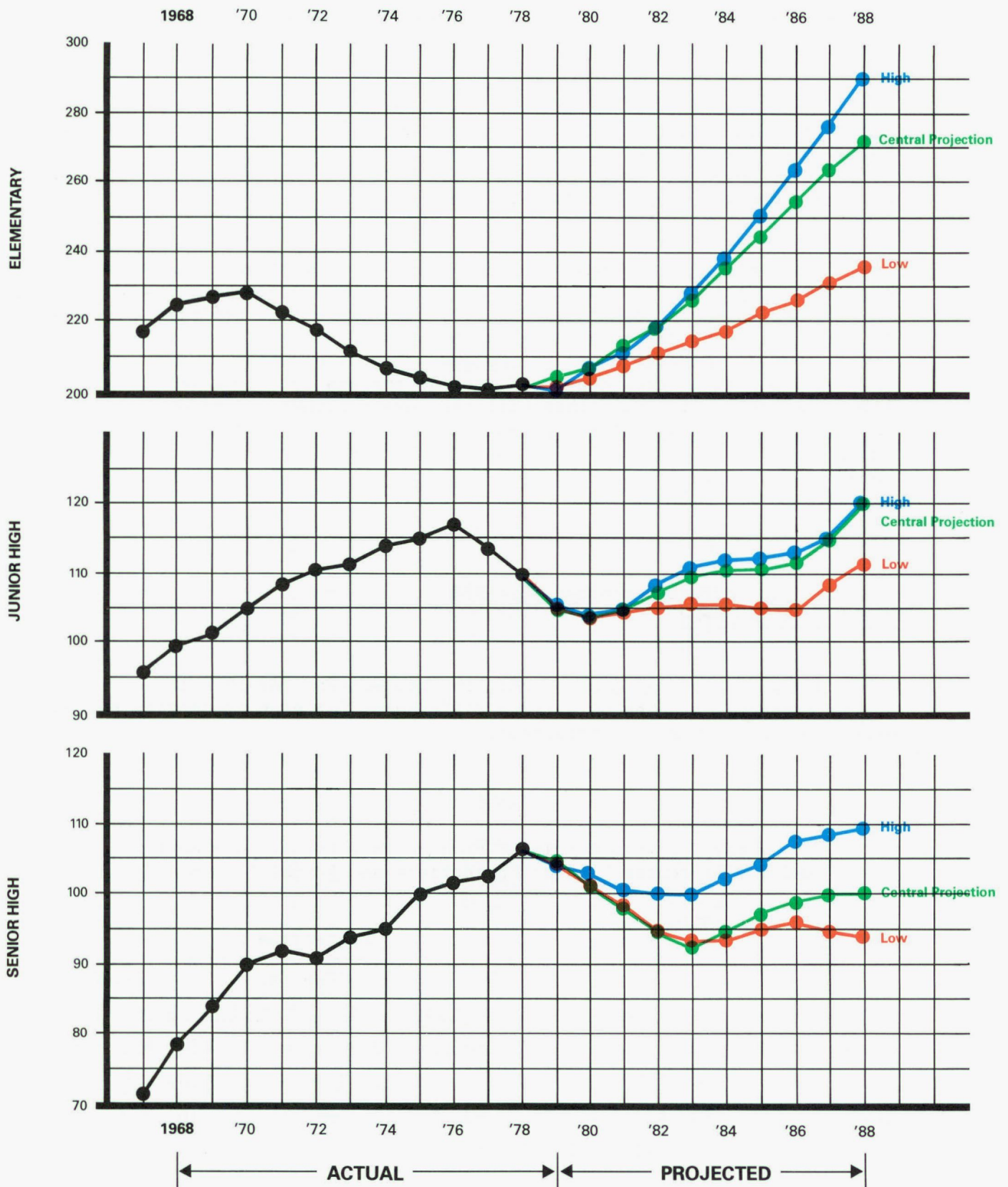
Figure 1
Alberta Total School Enrolments

Enrolment
('000s)



- Notes:
1. "High" Projection: PR method using Medium Fertility/Migration assumptions of ABS Series 4.
 2. "Central" Projection: AP method using Low Fertility/Migration assumptions of ABS Series 1.
 3. "Low" Projection: GP method using Low Fertility/Migration assumptions of ABS Series 1.

Figure 2
Alberta School Enrolments, by Grade Level



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